

WHAT IS CLAIMED

- 1) A machine for conditioning cigars, comprising:
  - at least one distribution station from which cigars are taken up by conveyor means and directed along a predetermined feed path;
  - piercing means operating along the feed path, designed to penetrate at least one respective end portion of each cigar and consisting in resistive elements such as can be heated directly by the Joule effect.
- 2) A machine as in claim 1, wherein the piercing means comprise needles fashioned from a ferrous material.
- 3) A machine as in claim 2, wherein each needle is connected directly to an electrical circuit in such a way that an electric current applied to the circuit will pass also through the needle.
- 4) A machine as in claim 3, wherein the needle is connected to the electrical circuit in series and comprises two mutually parallel portions distanced one from another and joined together by a pointed portion.

- 5) A machine as in claim 4, wherein the needles are capable of movement along the predetermined feed path and the two portions of each needle are connected by way of sliding contacts to respective conductive tracks of the electrical circuit, which are connected in turn to a source of electrical energy.
- 6) A machine as in claim 2, wherein each needle forms part of an electromagnetic circuit.
- 7) A machine as in claim 6, wherein the electro-magnetic circuit is a mutual induction circuit comprising at least one fixed inductor positioned at least along one section of the predetermined feed path, and an armature circuit associated with each needle and capable of movement along the feed path.
- 8) A machine as in claim 7, wherein the inductor comprises a set of first ferrite cores incorporated into an electrical winding and constituting a primary, whilst each armature circuit comprises a second ferrite core concatenated to and separated by a gap from the primary inductor, at least one coil turn constituting a secondary, wound partly about the second core and closed on a respective needle.

- 9) A machine as in claim 8, wherein each needle is connected in series to the coil turn and comprises two mutually parallel portions distanced one from another and joined together by a pointed portion.
- 10) A machine as in claim 6, wherein the electro-magnetic circuit comprises at least one fixed inductor positioned at least along one section of the predetermined feed path and generating magnetic fluxes through which the needles are caused to pass successively during their movement along the predetermined feed path.
- 11) A machine as in claim 10, wherein the inductor comprises a set of ferrite cores incorporated into an electrical winding connected to a source of electrical energy.
- 12) A machine as in claims 8 and 11, further comprising means by which to cool the fixed ferrite cores.
- 13) A machine as in claim 12, wherein the cooling means include a circuit, associated with the electrical winding located internally of the fixed ferrite cores, through which to direct a liquid coolant.

- 14) A machine as in claims 7 and 10, further comprising a control unit connected to the electrical winding and serving to regulate the power input to the selfsame winding.
- 15) A machine as in claim 14, further comprising a plurality of temperature sensors, each mounted close to a relative needle and able thus to detect the temperature of the selfsame needle, and connected also to the control unit in such a way as to allow of regulating the power input to the winding according to the temperature registering at the needles.
- 16) A machine as in claims 1 to 15, wherein the conveyor means are capable of continuous motion along the predetermined feed path.
- 17) A machine as in claim 16, further comprising a conveyor device forming part of the conveyor means and affording a plurality of clamp elements serving to restrain the cigars, wherein the piercing means operate in conjunction with the conveyor device.
- 18) A machine as in claim 17, wherein piercing means comprise a plurality of needles each positioned in alignment with one of the clamp elements of the

conveyor device and capable of movement as one with the clamp element along the predetermined feed path, and capable also of axial movement in a direction transverse to the predetermined feed path followed by the cigars between a position of proximity to the relative clamp element, in which the cigar restrained by the selfsame clamp element is pierced, and a position distanced from the clamp element.

- 19) A machine as in claim 18, wherein the conveyor device establishes a circular feed path forming part of the predetermined feed path.
- 20) A machine as in claim 19, wherein the conveyor device comprises a wheel rotatable about a relative axis, carrying the clamp elements around the periphery and incorporating means by which to support and drive the needles.
- 21) A machine as in claim 20, wherein each clamp element presents two jaws located on the periphery of the wheel and capable of movement between an open position and a closed position.
- 22) A machine as in claim 20, wherein conveyor means are composed of a first conveyor belt equipped with a

first plurality of cradle elements by which the cigars are carried from the distribution station to the conveyor device, and a second conveyor belt equipped with a second plurality of cradle elements by which the pierced cigars are carried from the conveyor device to a successive treatment station.